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## ***Poliomyelitis***

### **Overview**<sup>(1,2,3)</sup>

For a more complete description of Poliomyelitis, refer to the following texts:

- Epidemiology and Prevention of Vaccine-Preventable Diseases *Poliomyelitis* section.
- Red Book, Report of the Committee on Infectious Diseases.
- CCDCM Control of Communicable Diseases Manual

### **Case Definition**<sup>(4)</sup>

#### ***Clinical description***

Acute onset of a flaccid paralysis of one or more limbs with decreased or absent tendon reflexes in the affected limbs, without other apparent cause, and without sensory or cognitive loss (as reported by a physician).

#### ***Laboratory criteria for diagnosis***

- Isolation of poliovirus (one of three serotypes) from the stool or pharynx early in the course of the disease is presumptive evidence of poliomyelitis.

#### ***Case classification***

*Confirmed:* a case that meets the clinical case definition and in which the patient has a neurologic deficit 60 days after onset of initial symptoms, has died, or has unknown follow-up status.

*Probable:* a case that meets the clinical case definition.

#### ***Comment***

All suspected cases of paralytic poliomyelitis are reviewed by a panel of expert consultants before final classifications occurs. Only confirmed cases are included in Table 1 of the Morbidity and Mortality Weekly Report (MMWR). Suspected cases are enumerated in a footnote to the MMWR table.


### **Information Needed for Investigation**

**Verify clinical diagnosis.** What laboratory tests were conducted? What were the results? What are the patient's clinical symptoms?

**Establish the extent of illness.** Determine if household or other close contacts are, or have been, ill by contacting the health care provider, patient or family member.

**Contact the Regional Communicable Disease Coordinator**

**Contact the Bureau of Child Care** when case(s) are associated with a childcare facility.

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## **Case/Contact Follow Up And Control Measures**

Determine the source of infection.

- Obtain details of vaccine history, lot number, virus type, severity and persistence of residual paralysis 60 days after onset (if vaccine-associated).
- Isolate patient with Standard Precautions in hospital. Exclude from schools and children's settings until at least 14 days after onset of illness and until receipt of a medical release form.
- Disinfect throat discharges, feces and soiled articles.
- Determine whether the patient's disease represents an indigenous or imported case.

### **Control Measures**

See the Poliomyelitis section of the Epidemiology and Prevention of Vaccine-Preventable Diseases 7<sup>th</sup> ed. Centers for Disease Control and Prevention 2002.

See the Poliomyelitis section of the 2000 Red Book.

See the Poliomyelitis, Acute section of the CCDM


## **Laboratory Procedures**

Viral isolation. Isolation of the virus from the cerebrospinal fluid (CSF) is diagnostic but is rarely accomplished. Two stool specimens should be obtained 24 hours apart from the patients with suspected poliomyelitis. **All specimens should be sent to the Missouri State Public Health Laboratory for primary isolation.**

## **Reporting Requirements**

*Poliomyelitis* is a Category I disease and shall be reported to the local health authority or to the Missouri Department of Health and Senior Services (DHSS) within 24 hours of first knowledge or suspicion by telephone, facsimile or other rapid communication.

1. For confirmed and probable cases complete a "Disease Case Report" (CD-1) and the Poliomyelitis Report (IMMP-44).
2. Entry of the complete CD-1 into the MOHSIS database negates the need for the paper CD-1 to be forwarded to the Regional Health Office.
3. Send the completed secondary investigation form to the Regional Office.
4. All outbreaks or "suspected" outbreaks must be reported as soon as possible (by phone, fax or e-mail) to the Regional Communicable Disease Coordinator. This can be accomplished by completing the Missouri Outbreak Surveillance Report (CD-51).
5. Within 90 days from the conclusion of an outbreak, submit the final outbreak report to the Regional Communicable Disease Coordinator.

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## **References**

1. American Academy of Pediatrics. "Poliovirus infections". In: Pickering, LK, ed. 2000 Red Book: Report of the Committee on Infectious Diseases. 25<sup>th</sup> ed. Elk Grove Village, IL. 2000: 465-470.
2. W. Atkinson, C. Wolfe, (Eds.) Epidemiology and Prevention of Vaccine-Preventable Diseases 7<sup>th</sup> ed. Centers for Disease Control and Prevention 2002. 71-82.
3. ImmunoFacts Vaccines and Immunologics. "Poliovirus Vaccine Inactivated". Fact and Comparisons. St. Louis, MO 2002 224-231.
4. ACIP. Supplementary chart: Recommended Childhood Immunization Schedule, United States, Approved by the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFP).

# **Poliomyelitis**

## **FACT SHEET**

### **What is poliomyelitis?**

Poliomyelitis is a viral infection most often recognized by the acute onset of flaccid paralysis, which may affect the central nervous system. Even though many infections are asymptomatic, the efficiency with which polio is transmitted under the right conditions can lead to epidemics of infantile paralysis.

### **Who gets polio?**

At the present time there is no poliovirus in the United States, however, polio is more common in infants and young children and occurs under conditions of poor hygiene. Travelers to foreign countries should get a booster of vaccine to ensure protection.

### **How is polio spread?**

Poliovirus is spread through the fecal-oral route.

### **What are the symptoms of polio?**

Symptoms include fever, nausea and vomiting, malaise, headache, excruciating muscle pain and stiffness in the neck and back.

### **How soon do symptoms appear?**

The incubation period for Polio ranges from 3-21 days

### **When and for how long is a person able to spread polio?**

The virus has been found in the throat for approximately 1 week and in the feces for 3-6 weeks or longer. Cases are most infectious from 7-10 days before and after the onset of symptoms.

### **Does past infection with polio disease make a person immune?**

There are 3 types of polio. A person cannot be infected by the same type more than once, but may become infected with a different type.

### **What is the treatment for polio?**

There is presently no cure for polio. Treatment involves supportive care. However, a series of vaccine is available for children starting at 2 months of age. Adults whose

immunization status is unknown should be given a total of three doses of polio vaccine separated by at least 4 weeks.


### **What are the possible complications of polio?**

Complications include paralysis (most commonly of the legs). Paralysis of the muscles involved in respiration and swallowing, which can be fatal.

### **What can be done to prevent polio?**

Maintaining high levels of polio immunization in the community is the single most effective preventive measure. In the United States, The ACIP recommend that all children should receive four doses of IPV at 2, 4, 6 to 18 months, and 4 to 6 years.

**Missouri Department of Health and Senior Services  
Section for Communicable Disease Prevention  
Phone: (866) 628-9891 or (573) 751-6113**

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## Sample Physician Notification Letter

Date

Doctor's Name

Address


City, State Zip Code

Dear Dr. \_\_\_\_\_:

A case of Poliomyelitis has been diagnosed in this community.

Please be alert to the presence of this disease in your community and ensure that children are current with their polio vaccination series. If you have any questions, please contact your local health department, phone number.

Sincerely,

	Division of Environmental Health and Communicable Disease Prevention	
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## **Important Information About Poliovirus Vaccine Inactivated For Prevention of Polio**

### **Contraindications:**

- Serious allergic reaction to a vaccine component, or an allergic reaction following a prior dose of vaccine.
- Moderate or severe acute illness at the time of vaccination.


### **Important Facts:**

Since IPV contains trace amount of streptomycin, neomycin, and polymyxin B, there is a possibility of allergic reactions to individuals sensitive to these antibiotics.

### **Adverse Reactions:**

- No serious adverse events have been associated with use of the currently available IPV vaccine.
- If any symptoms occur, please contact your physician.



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## Dosage Recommendation Guidelines for Poliomyelitis

Refer to the Advisory Committee on Immunization Practice (ACIP) for the recommended childhood vaccination schedule, which is published each January. Recommendations for vaccinations of adolescents and adults are revised less frequently which are published annually. Physicians and other health care providers should always ensure that they are following the most up-to-date schedules which are available from CDC's National Immunization Program website at <http://www.cdc.gov/nip> (4 June 2003).

**Children:** The national policy consensus is to give 4 doses of e-IPV. Typically, this would include e-IPV doses at 2 months, 4 months, 6 to 18 months, and 4-6 years of age. Separate the first 2 doses by >4 weeks (preferably 8 weeks). Give the third dose >4 weeks (preferably 8 to 12 months) after the second dose. If the third dose of poliovirus vaccine is given after the fourth birthday, a fourth dose is not needed.

**Adults:** For unvaccinated adults at increased risk of exposure to poliovirus, give a primary series of e-IPV: 2 doses 4 to 8 weeks apart, with a third dose given 6 to 12 months later. If 2 to 3 months remain before protection is needed, give 3 doses of e-IPV >4 weeks apart. Likewise, if only 1 or 2 months remain, give 2 doses of e-IPV 4 weeks apart. If < 4 weeks remains, give a single dose of e-IPV. Give >1 dose of e-IPV to adults at increased risk of exposure who have had >1 dose of OPV < 3 doses of conventional IPV (available before 1988), or a combination conventional IPV and OPV totaling < 3 doses. If time permits, give any additional doses needed to complete a primary series. Give a single dose of e-IPV to adults who have completed a primary series with any poliovirus vaccine and who are at increased risk of exposure to poliovirus. Do not count doses within the minimum interval, because too short an interval may interfere with antibody response and protection from disease. Increasing the interval beyond the recommended timing does not affect the ultimate efficacy of immunization, but waiting does delay achieving adequate protection from infection.

**Route & Site:** SC or IM in the deltoid region. In infants and children, the preferred site is the anterolateral thigh.

**Documentation Requirement:** Federal law requires that the following information be documented in the recipients' permanent medical record or in a permanent office log: (1) The manufacturer and lot number of the vaccine; (2) the date of its administration; and (3) the name, address, and title of the person administering the vaccine. Certain adverse events must be reported to the VAERS system @ (800) 822-7967



MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES  
OFFICE OF SURVEILLANCE  
**POLIOMYELITIS REPORT**

PATIENT	NAME (LAST, FIRST, M.I.)			CASE NO.
	ADDRESS	CITY	STATE	COUNTY
Reporting Physician Nurse/Hosp/ Clinic	NAME			TELEPHONE
	ADDRESS	CITY	ZIP CODE	

**DEMOGRAPHICS**

BIRTHDATE (MONTH/DAY/YEAR) ____/____/____	RACE <input type="checkbox"/> NATIVE AMER./ALASKAN NATIVE <input type="checkbox"/> ASIAN/PACIFIC ISLANDER <input type="checkbox"/> AFRICAN AMERICAN <input type="checkbox"/> WHITE <input type="checkbox"/> OTHER <input type="checkbox"/> UNKNOWN	ETHNICITY <input type="checkbox"/> HISPANIC <input type="checkbox"/> NOT HISPANIC <input type="checkbox"/> UNKNOWN
SEX <input type="checkbox"/> MALE <input type="checkbox"/> FEMALE <input type="checkbox"/> UNKNOWN		

**CLINICAL DATA**

DATE OF FIRST SYMPTOMS ____/____/____	CLINICAL DESCRIPTION OF ILLNESS (DATES, COURSE, ETC.) _____ _____ _____ _____
PRELIMINARY DIAGNOSIS <input type="checkbox"/> NONPARALYTIC POLIO <input type="checkbox"/> PARALYTIC POLIO	
TYPE OF PARALYSIS <input type="checkbox"/> BULBAR <input type="checkbox"/> SPINAL <input type="checkbox"/> BULBO-SPINAL	

**LABORATORY - STATE LABORATORY**

SPECIMENS FOR ISOLATION SUBMITTED  
☐ YES ☐ NO

SPECIMEN TYPE	DATE OBTAINED	RESULT (TYPE)

SERUM SPECIMENS SUBMITTED  
☐ YES ☐ NO

	TEST (NEUT. CF)	DATE OBTAINED	P1	P2	P3
SERUM 1					
SERUM 2					
SERUM 3					

CSF DATA	DATE	#WBC	% LYMPH	PROT	GLU
CSF 1					
CSF 2					
CSF 3					

**LABORATORY - CDC LABORATORY**

SPECIMENS FOR ISOLATION SENT <input type="checkbox"/> YES <input type="checkbox"/> NO		RECEIVED <input type="checkbox"/> YES <input type="checkbox"/> NO		DATE RECEIVED	
SPECIMEN TYPE		DATE OBTAINED		RESULT (TYPE)	
STRAIN CHARACTERIZATION RESULTS <input type="checkbox"/> VAN WEZEL <input type="checkbox"/> OLIGONUCLEOTIDE					
SERUM SPECIMENS SUBMITTED <input type="checkbox"/> YES <input type="checkbox"/> NO		RECEIVED <input type="checkbox"/> YES <input type="checkbox"/> NO		DATE(S) RECEIVED	
	TEST (NEUT.)	DATE OBTAINED	P1	P2	P3
SERUM 1					
SERUM 2					
SERUM 3					
EMG		NERVE CONDUCT			

**IMMUNOLOGIC STATUS**

KNOWN IMMUNE DEFICIENCY <input type="checkbox"/> YES <input type="checkbox"/> NO	DESCRIBE
IMMUNE STUDIES <input type="checkbox"/> YES <input type="checkbox"/> NO	WHICH
RESULTS  	

**VACCINE HISTORY**

INACTIVATED VACCINE (SALK) <input type="checkbox"/> NOT VACCINATED		ORAL VACCINATION (SABIN) <input type="checkbox"/> NOT VACCINATED	
DOSE	DATE OF VACCINATION	TYPE OF VIRUS	DATE OF VACCINATION
1		TYPE I	
2		TYPE II	
3		TYPE III	
4		TRIVALENT	
IF SALK INOCULATION WITHIN 30 DAYS PRIOR TO ONSET		IF ORAL VACCINATION WITHIN 30 DAYS PRIOR TO ONSET	
MFR	LOT NO.	MFR	LOT NO.
SITE OF INJECTION	SITE(S) OF 1ST PARALYSIS	HOUSEHOLD OR CLOSE CONTACT WITH ORAL VACCINE WITHIN PREVIOUS 60 DAYS <input type="checkbox"/> YES <input type="checkbox"/> NO	

**EXPOSURE HISTORY**

CASE/HH MEMBER TRAVEL TO ENDEMIC/EPIDEMIC AREA <input type="checkbox"/> YES <input type="checkbox"/> NO	WHO	WHERE	DATE(S)
CASE/HH MEMBER EXPOSURE TO PERSON(S) FROM OR RETURNING FROM ENDEMIC AREAS <input type="checkbox"/> YES <input type="checkbox"/> NO	WHO	WHERE	DATE(S)
CASE/HH CONTACT WITH KNOWN CASE <input type="checkbox"/> YES <input type="checkbox"/> NO	WHO	WHERE	DATE(S)
OPV RECIPIENT CONTACT <input type="checkbox"/> YES <input type="checkbox"/> NO			
HOUSEHOLD CONTACT <input type="checkbox"/> YES <input type="checkbox"/> NO	DATE	AGE	RELATION
NON-HOUSEHOLD CONTACT <input type="checkbox"/> YES <input type="checkbox"/> NO	DATE	AGE	
DATE CONTACT RECEIVED OPV	DOSE NUMBER	LOT NUMBER	

**FOLLOW UP**

## CLINICAL STATUS 60 DAYS OR LONGER AFTER ONSET

- ☐ COMPLETE RECOVERY, NO RESIDUAL PARALYSIS  
☐ MINOR INVOLVEMENT ONLY  
☐ SIGNIFICANT DISABILITY  
☐ SEVERELY DISABLED (BED, WHEELCHAIR, EXTENSIVE BRACING)

☐ DEATH - DATE \_\_\_\_\_

CAUSE OF DEATH \_\_\_\_\_

☐ NEVER ANY PARALYSIS (NONPARALYTIC)

## FINAL CLASSIFICATION

- ☐ PARALYTIC POLIO WITH RESIDUAL PARALYSIS  
☐ PARALYTIC POLIO, NO RESIDUAL PARALYSIS  
☐ PARALYTIC DISEASE DUE TO OTHER AGENT

SPECIFY \_\_\_\_\_

## ASEPTIC MENINGITIS DUE TO:

- ☐ POLIOVIRUS (NONPARALYTIC POLIO)  
☐ ECHO  
☐ COXSACKIE  
☐ OTHER (SPECIFY) \_\_\_\_\_  
☐ ASEPTIC MENINGITIS, UNKNOWN ETIOLOGY

☐ OTHER FINAL DIAGNOSIS \_\_\_\_\_

**INSTRUCTIONS**

Please submit this form immediately after preliminary information has been obtained on a suspected case of poliomyelitis.

Subsequently, revised copies of this form should be submitted when additional information becomes available. The following information, usually obtained in epidemiologic investigations of poliomyelitis cases, should be included: (attach additional sheet if necessary).

- a. Clinical History: A brief narrative of history, physical signs, and clinical laboratory result, including peripheral white blood cell count and cerebrospinal fluid findings.
- b. Travel History: An itinerary of the patient's travel outside of city of residence during preceding 30 days; history of contact with travelers.
- c. Poliovaccine Contact History: Household or other close contact with a recipient of oral poliovaccine within 60 days prior to onset of illness; specify date and relationship of recipient; if recipient is not a household member, describe frequency of contact and dates of contact. Include available virologic data on contacts of patient.
- d. Other: Describe other recent or concurrent immunizations. For young infants, history of breast feeding and maternal history of vaccination or exposure to poliomyelitis should be described.

DATE CASE FIRST REPORTED TO STATE MONTH      DAY      YEAR	FORM COMPLETED BY	TELEPHONE  (      )	DATE FORM COMPLETED MONTH      DAY      YEAR
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